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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/673,792	09/29/2003	Robert P. Mahoney	16426/09011	2994
27530	7590	03/21/2006	EXAMINER	
NELSON MULLINS RILEY & SCARBOROUGH, LLP 1320 MAIN STREET, 17TH FLOOR COLUMBIA, SC 29201			METZMAIER, DANIEL S	
			ART UNIT	PAPER NUMBER
			1712	

DATE MAILED: 03/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/673,792

Applicant(s)

MAHONEY ET AL.

Examiner

Daniel S. Metzmaier

Art Unit

1712

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-58 is/are pending in the application.
- 4a) Of the above claim(s) 21-58 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2/25 & 5/7/2004.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

Claims 1-58 are pending.

#### ***Election/Restrictions***

1. Applicant's election of the invention of Group I and the species corresponding to aniline/formaldehyde/cationic organic polymer such as cationic acrylamide in the reply filed on January 9, 2006 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

#### ***Claim interpretation***

3. Applicants claim a composition "comprising a flocculant and/or coagulant and a polyarylamine polymer formed by the reaction of less than 2 moles of aldehyde per mole of aryl amine in the presence of an acid in an aqueous solution". Applicants define ([0019] of the instant specification) the term "arylamine" as: "The arylamine of the present invention can be any aromatic amine that is capable of reaction with an aldehyde to form a polymer.". The melamine compounds read on said definition since they are aromatic, capable of reaction with formaldehyde to form a polymer.

Art Unit: 1712

Furthermore, the compositions claimed are drafted in product-by-process format. Product-by-process claims are examined based on the product rather than the process steps in the process of making. The process steps are given patentable weight only to the extent said process steps necessarily impart structure to the product. Attention is directed to MPEP § 2113.

### ***Claim Objections***

4. Claim 6 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 6 is dependent on claim 1. Since an amine requires an amino nitrogen, the remainder of the amine is unspecified, and the arylamine is always cyclic; it is unclear how the amine can be other than bonded directly to the cyclic compound. To the extent applicants intend the amine nitrogen is bonded directly to the cyclic compound, the claims should so specify.

During patent examination, the claims are given their broadest reasonable interpretation consistent with the specification.

### ***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

6. Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 is indefinite regarding the metes and

Art Unit: 1712

bounds of the subject matter sought for patent since it is unclear whether the “floculant and/or coagulant” is intended to modify or define the function of the polyarylamine polymer or is a further ingredient. Attention is further directed to claim 20, wherein melamine formaldehyde is claimed as the flocculant.

It is unclear whether the detackifying compositions claimed are an “aqueous mixture” set forth in line 2 of claim 1 or said “aqueous mixture” refers to the “detackifying paint in an aqueous system comprising an aqueous mixture”.

Furthermore, the claimed ratio of the amine modifier :arylamine in claims 17, 18 , and 19 are indefinite where the amine modifier and the aryl amine read on the same compounds, e.g., melamine.

In claim 5, it is unclear how an hexamethylenetetramine is a aldehyde releasing agent.

Claim 7 and 8 contain an improper alternative groupings. It is unclear what “its” refers in the penultimate line of the claim. The claim contains multiple uses of “and”. Claim 8 contains no conjunction. See MPEP § 2173.05(h).

### ***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-12 and 14-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Selvarajan et al, US 4,422,944. Selvarajan et al (example 3, aniline ~ 0.1175 moles

Art Unit: 1712

and formaldehyde ~ 0.142 moles, HCl ~ 0.226 moles; and Table 1, wherein A and F have a ratio of 2 : 2, e.g., A-HMDA-F ~ 2:1:2) discloses the products comprising the reaction products of aniline and formaldehyde added as flocculants to treat turbid waters. Since the polymers are flocculants as required by claim 1, said polymers read on the claimed "flocculants and/or coagulants".

Claim 20 is included in this rejection since the polymers disclosed in the Selvarajan et al reference are organic flocculants. During patent examination, the claims are given their broadest reasonable interpretation consistent with the specification. While applicants define preferred species, said species are alternatively claimed with the generic language, "organic flocculants", also set forth.

### ***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

Art Unit: 1712

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 1-6 and 10-20 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Rey et al, US 5,240,509.

Rey et al discloses treating water with compositions comprising a combination of melamine-formaldehyde and an inorganic flocculant or nonionic flocculant, e.g., polymethacrylamide. Rey et al (column 6-7, lines 63-19) disclose the molar ratio of the melamine to formaldehyde is 1:1 to 1:6, preferably 1:1 to 1:3. Said ranges encompass and clearly envisage the claimed ratio of  $1 : < 2$ .

Regarding claim 16, see column 7, lines 20-26. Claims 17 and 19 are included herein since the ratio would read on the claims depending on how the melamine was attributed to the overlapping components (see above).

To the extent the Rey et al reference differs from the claims in that the ratio of  $1 : < 2$  is not disclosed with sufficient specificity, it would have been obvious to one of ordinary skill in the art at the time of applicants' invention to vary the melamine to formaldehyde ratio within the ranges taught for the advantage of modifying the flocculation capacity of the resins and/or to tailor the melamine-formaldehyde resins to the particular system being treated.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel S. Metzmaier whose telephone number is (571) 272-1089. The examiner can normally be reached on 9:00 AM to 5:30 PM.

Art Unit: 1712

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Daniel S. Metzmaier  
Primary Examiner  
Art Unit 1712

DSM